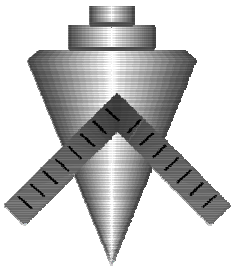
CONSTRUCTION
BASIC
VETERANS

BUILDER

Qualification Standards



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BUILDER

Qualification Standards

BU Topics - Phase 1 (BU-1)		BU Topics - Phase 2 (BU-2)	
Topic #	Topic Title	Topic #	Topic Title
100	Mathematics	101	Construction Drawings and Specifications
102	Building Materials	104	Woodworking
103	Handtools & Powder Actuated Tools	105	Forming, Reinforcing, and Placing Concrete
109	Exterior Finish Carpentry	106	Masonry
113	Interior Finish and Drywall	107	Floor and Wall Framing and Stair Construction
114	Painting and Preservation	108	Roof Framing
115	Doors and Windows	110	Composition Roof Shingles
116	Suspended Ceiling	111	Heavy Timber Bridge
117	Floor and Wall Tile	112	Pre-Engineered Building
118	Interior Trim	119	Hot Built-up Roof
120	Tear Down/Demolition		

The above items may be accomplished by (but are not limited to) utilizing one or more of the training resources listed below. Selecting the right training resource(s) is the responsibility of your chain of command. Considerations such as cost and availability must be included in determining which resource(s) best meet your and your command's particular needs.

Training Resources

Mobile Training Teams	Vocational Technical Schools	Utility companies
NCTC Port Hueneme	Local Contractors	OJT "AT" with an active duty NMCB
NCTC Gulfport	Contract instructors	Municipal Public Schools (night school)
Other Naval/Service Schools	Municipal public works	Other(s)

TABLE OF CONTENTS

BUILDER
Qualification Standards
Section 100

100 Mathematics

References:
~~a. Mathematics, Vol. 1. NAVPERS 10069-C~~ [1]
~~b. General Mathematics for Construction Ratings, NAVPERS 94415~~[2]
a. Mathematics, Basic Math and Algebra, NAVEDTRA, Course No: 14139

100.1 With the use of a calculator **CONVERT** whole numbers, fractions, decimals, and percents.

_____
(Signature) (Date)

.2 With the use of a calculator, **CALCULATE** the area for a polygon, a circle, and surface area for a cylinder.

_____
(Signature) (Date)

[1] Obsolete. Replaced with NAVEDTRA 14139. See NAVEDTRA Number Conversion Table, Updated 27 September 2002.

Note: NAVEDTRA 10069-C was more recently published as *Mathematics, volume 1*, NAVEDTRA 10069-D1 (also obsolete). Volume 1 provides a review of basic arithmetic and elementary algebra; it includes fractions, decimals, percentages, exponents, radicals, and logarithms. It also contains exercises in factoring polynomials, linear equations, ratio, proportions, variation, complex numbers and quadratic equations. It presents brief introduction to plane figures, geometric construction, and trigonometry. Reduction, and General Maintenance books.) Reference: *Electronics Technician Supervisor (ET1)* NAVEDTRA: 14085, page 1-6.
Retrieved January 3, 2003 from https://www.advancement.cnet.navy.mil/products/web-pdf/tramans/bookchunks/14085_ch1.pdf

[2] Obsolete.

Section 100, cont'd

.3 With the use of a calculator, **CALCULATE** the volume for a prism, pyramid, cone, sphere, cylinder, and rectangular-block shape.

_____

(Signature) (Date)

Additional question for your review (no signature required)

- With the use of a calculator, **SOLVE** mathematical problems common to the Builder rating.

BUILDER
Qualification Standards
Section 101

101 Construction Drawings and Specifications

References:
a. Blueprint Reading and Sketching, NAVEDTRA 10077-D
b. Builder 3 & 2, NAVEDTRA 14043 / 14044
c. Building Trades Blueprint Reading (American Technical Society)

100.1 **IDENTIFY** and **DESCRIBE** drawing and drafting instruments.

_____
(Signature) (Date)

.2 **IDENTIFY** from a blueprint or **DRAW** each of the following lines: object, hidden, center, extension, dimension, leader, short break, long break, phantom or alternate position.

_____
(Signature) (Date)

.3 **LOCATE, READ, and INTERPRET** dimensions, types and sizes of windows and doors, and interior finish for floors, walls, and ceilings.

_____
(Signature) (Date)

.4 **DESCRIBE** the conventions used when drawing orthographic projections. Views: front, top right side, back and left, auxiliary.

_____
(Signature) (Date)

Section 101, cont'd

.5 **EXPLAIN** the dimensions, types and sizes of windows, doors, and interior finish for floors, walls, and ceilings. **EXPLAIN** what a schedule is.

_____
(Signature) (Date)

.6 **READ** and **INTERPRET** simple blueprints and drawings for fieldwork.

_____
(Signature) (Date)

.7 **EXPLAIN** the contents of these three areas of the specifications: General Requirements, Specific Conditions, and Amendments.

_____
(Signature) (Date)

.8 **IDENTIFY** the faces on an architect scale.

_____
(Signature) (Date)

.9 **LIST** and **DESCRIBE** the items in a title block on a drawing.

_____
(Signature) (Date)

.10 **LIST** the four items on a Bill of Material.

_____
(Signature) (Date)

BUILDER
Qualification Standards
Section 102

102 Building Materials

Reference:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044

102.1 **EXPLAIN** the difference between Nominal and Actual sizing in lumber and **STATE** the common lengths of lumber.

_____
(Signature) (Date)

.2 **EXPLAIN** how to distinguish between hardwoods and softwoods.

_____
(Signature) (Date)

.3 **DESCRIBE** the differences between lumber surfaces: rough, surfaced/dressed, and worked.

_____
(Signature) (Date)

.4 **DESCRIBE** the composition of plywood is and its advantages and uses in construction.

_____
(Signature) (Date)

.5 **DESCRIBE** the sizes, types, and grades of plywood (A, B, C, and D).

_____
(Signature) (Date)

Section 102, cont'd

.6 **DESCRIBE** the size designation of nails, and the characteristics and uses of the following: common, wire, box, finishing, duplex and roofing nail.

_____

(Signature) (Date)

.7 **DESCRIBE** the advantages of wood screws.

_____

(Signature) (Date)

.8 **DESCRIBE** the characteristics and **TYPES** of bolts.

_____

(Signature) (Date)

BUILDER
Qualification Standards
Section 103

103 Hand Tools and Powder Actuated Tools

References:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044
b. Use and Care of Hand Tools and Measuring Tools, NAVEDTRA 14256

103.1 **DESCRIBE** the features of steel tape measures and wood folding rules and **DEMONSTRATE** how to take measurements with each.

_____
(Signature) (Date)

.2 **DESCRIBE** the features and **DEMONSTRATE** the uses of a hand level.

_____
(Signature) (Date)

.3 **DISCUSS** the safety precautions that should be observed when using a plumb bob and what to do when the tip becomes damaged.

_____
(Signature) (Date)

.4 **DEMONSTRATE** the use of a chalk line reel.

_____
(Signature) (Date)

Section 103, cont'd

.5 **DESCRIBE** the types of carpenter's hammers and **DEMONSTRATE** usage and safety procedures for each type.

_____
(Signature) (Date)

.6 **DESCRIBE** the features of the various types of handsaws and **DEMONSTRATE** how to saw using proper safety precautions.

_____
(Signature) (Date)

.7 **CUT** cardboard, paper, sheetrock, string and other materials with a utility knife using proper safety precautions.

_____
(Signature) (Date)

.8 **DESCRIBE** the operation of a circular saw, its safety features, and **DEMONSTRATE** its safe usage.

_____
(Signature) (Date)

.9 **DESCRIBE** the operation of a miter saw, its safety features, and **DEMONSTRATE** its safe usage.

_____
(Signature) (Date)

Section 103, cont'd

.10 **DEMONSTRATE** the use of a brace and bit and how to change bits.

_____
(Signature) (Date)

.11 **DESCRIBE** the safety features and uses of electric portable drills.

_____
(Signature) (Date)

.12 **EXPLAIN** the purpose and applications of powder-actuated tools.

_____
(Signature) (Date)

.13 **IDENTIFY and DESCRIBE** the main parts of a powder-actuated fastening tool.

_____
(Signature) (Date)

.14 **IDENTIFY** and **SELECT** boosters for various applications.

_____
(Signature) (Date)

.15 **DEMONSTRATE** the safety procedures for operating a powder-actuated tool.

_____
(Signature) (Date)

Section 103, cont'd

.16 **FIELDSTRIP, CLEAN,** and **INSPECT** a powder-actuated tool.

_____

(Signature) (Date)

.16 **OPERATE** a powder-actuated tool.

_____

(Signature) (Date)

BUILDER
Qualification Standards
Section 104

104 Woodworking

References:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044
b. Use and Care of Hand Tools and Measuring Tools, NAVEDTRA 14256
c. Operation of Modern Woodworking Machines (Benzinger, Bruce and Glencoe, Inc.)

104.1 **DISCUSS** the characteristics of these simple joints: butt, miter (4 ways), lap (4 kinds).

_____
(Signature) (Date)

.2 **DISCUSS** the characteristics of these complex joints: dado, rabbet, mortise and tenon, dovetail, edge joints, dowel, and tongue and groove.

_____
(Signature) (Date)

.3 **FABRICATE** each of the above simple and complex joints.

_____
(Signature) (Date)

.4 **DEMONSTRATE** the three major steps in fabricating a joint. (1) square the stock, (2) layout of the joint, (3) cutting the members.

_____
(Signature) (Date)

Section 104, cont'd

.5 **EXPLAIN** the safety precautions applicable to the use of shop machines.

_____
(Signature) (Date)

.6 **DISCUSS** woodworking shop safety.

_____
(Signature) (Date)

.7 **DESCRIBE** the operation and safety features of a tilt-arbor table saw and **DEMONSTRATE** how to cut wood using crosscut, combination, and dado blades.

_____
(Signature) (Date)

.8 **DESCRIBE** the ten parts of a radial arm saw, their function and how the saw differs from a table saw.

_____
(Signature) (Date)

.9 **DEMONSTRATE** procedures to crosscut, rip, miter, dado, plough, rabbet, and shape using a radial arm saw with proper safety techniques.

_____
(Signature) (Date)

Section 104, cont'd

.10 **DESCRIBE** the purpose of a trailer-mounted field saw and its setup.

_____

(Signature) (Date)

.11 **DESCRIBE** the operation of a jointer and a planer (including safety) and how they are different from each other.

_____

(Signature) (Date)

BUILDER
Qualification Standards
Section 105

105 Forming, Reinforcing, and Placing Concrete

References:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044
b. Steelworker 3 & 2, NAVEDTRA 14250 / 14251
c. Concrete Form Construction (Del Mar Publishing)

105.1 **DEFINE** formwork and **DESCRIBE** how wood, steel, and earth can each be used for formwork.

_____
(Signature) (Date)

.2 **DESCRIBE** the three types of footing formwork, "I", "L", and inverted "T" and where each is used.

_____
(Signature) (Date)

.3 **DISCUSS** building layout, erecting of batter boards, erection procedures, and squaring corners.

_____
(Signature) (Date)

.4 **CONSTRUCT** the formwork for a footing after proper excavation of the site. Formwork will be of correct dimensions and square to within ± 1/8"

_____
(Signature) (Date)

.5 **DISCUSS** the following typical form members and their functions: sheathing, stud, waler, braces (kneebrace and kicker), stake, deadman, snap ties, waler hanger bracket, wedges.

_____
(Signature) (Date)

.6 **DESCRIBE** how to fabricate slab formwork. **FABRICATE** slab formwork.

_____
(Signature) (Date)

.7 **DISCUSS** the different types of reinforcing steel and welded wire fabric used in concrete formwork.

_____
(Signature) (Date)

.8 **DESCRIBE** the use and function of the following: float, steel trowel, knee boards, edger, jointer/groover, spade or puddling stick, mechanical vibrator, pressure sprayer.

_____
(Signature) (Date)

.9 **DESCRIBE** the five types of concrete and where each may be used.

_____
(Signature) (Date)

Section 105, cont'd

.10 **EXPLAIN** the safety precautions applicable to the mixing, placing, and finishing of concrete.

_____
(Signature) (Date)

.11 **EXPLAIN** the components utilized in the mixing, placing, and finishing of concrete.

_____
(Signature) (Date)

.12 Given the dimensions of a slab, coarse aggregate size, and the design mix, **CALCULATE** the amount of dry ingredients for concrete.

_____
(Signature) (Date)

.13 **PLACE** concrete in slab form.

_____
(Signature) (Date)

.14 **FINISH** concrete with very few irregularities, blemishes, tool marks, or voids on the entire surface.

_____
(Signature) (Date)

.15 **DEMONSTRATE** formwork removal without damaging the concrete.

_____
(Signature) (Date)

BUILDER
Qualification Standards
Section 106

106 Masonry

References:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044
b. Cement Mason's Manual (Portland Cement Association)
c. Masonry Simplified (American Technical Society, J. Ralph Dalzell and Gilbert Townsend)

106.1 Given the length, width, and height of a foundation, **COMPUTE** the number of masonry units required for construction.

_____
(Signature) (Date)

.2 As a crewmember, **CONSTRUCT** a block foundation. Finished work will be within ± 1/8" tolerance.

_____
(Signature) (Date)

.3 Given the dimensions of a structure and the mix design, **CALCULATE** the amount of dry ingredients required to construct the foundation.

_____
(Signature) (Date)

.4 **MIX** mortar to the consistency necessary for proper bonding.

_____
(Signature) (Date)

Section 106, cont'd

.5 **DESCRIBE** the following concrete masonry units (CMU): stretcher blocks, corner blocks, lintel blocks, and pier blocks.

_____
(Signature) (Date)

.6 **EXPLAIN** what the difference is between actual and nominal sizes of CMU.

_____
(Signature) (Date)

.7 **EXPLAIN** the procedures utilized in the mixing of mortar, laying CMU, core filling and the installation of anchor bolts.

_____
(Signature) (Date)

.8 **EXPLAIN** the safety precautions applicable to mixing of mortar and the laying of CMU.

_____
(Signature) (Date)

.9 **INSTALL** anchor bolts in completed walls within 1/4" of specified location.

_____
(Signature) (Date)

BUILDER
Qualification Standards
Section 107

107 Floor and Wall Framing and Stair Construction

References:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044
b. Carpentry, American Technical Society (Leonard Koel)
c. Construction Materials, Methods, Careers (Goodheart-Wilcox)
d. Fundamentals of Carpentry, American Technical Society (Durbahn and Sunberg)
e. Carpentry in Residential Construction (Baszinski, Prentice-Hill)

107.1 **NAME** the four major components of light framing.

_____
(Signature) (Date)

.2 **DISCUSS** the layout and placement of a box sill in platform floor construction and **INSTALL** a sill plate without pulling anchor bolts from the masonry (include a sill sealer if required).

_____
(Signature) (Date)

.3 **DESCRIBE** what a girder is and its function in floor construction.

_____
(Signature) (Date)

Section 107, cont'd

.4 **DESCRIBE** what floor joists and bridging are and methods of installation.

_____
(Signature) (Date)

.5 **CONSTRUCT** a floor frame with ± 1/8" tolerance and bridging staggered and secured 1-1/2" off center.

_____
(Signature) (Date)

.6 **DESCRIBE** the purpose of sub-flooring. and different types of materials used.

_____
(Signature) (Date)

.7 **INSTALL** sub-floor panels ensuring ends of panels fall on center of joists.

_____
(Signature) (Date)

.8 **DEFINE** and **DISCUSS** the following platform wall components: plates, common studs, corner posts, cripple studs, header, trimmer studs, rough window sill, fire blocks/stops, diagonal bracing.

_____
(Signature) (Date)

Section 107, cont'd

.9 **LAYOUT** and **CONSTRUCT** a wood framed wall; include rough wall openings and inside and outside corner posts to within ± 1/8".

_____

(Signature) (Date)

.10 **INSTALL** upper top plate ensuring it overlaps the corners of the lower top plate.

_____

(Signature) (Date)

.11 **INSTALL** fire block and outside plywood bracing (in the wall section).

_____

(Signature) (Date)

.12 **DEFINE** the following stair components: tread, riser, stringer/carriage, nailing block, kickplate, and railing.

_____

(Signature) (Date)

.13 **COMPUTE** stringer layout dimensions by finding the total rise, total run, unit of rise, and the unit of run for stair construction.

_____

(Signature) (Date)

Section 107, cont'd

.14 **EXPLAIN** the components utilized in stair construction.

_____

(Signature) (Date)

.15 **LAYOUT** and construct a stair stringer using a framing square. **SECURE** stringers and treads.

_____

(Signature) (Date)

BUILDER
Qualification Standards
Section 108

108 Roof Framing

References:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044
b. Carpentry, American Technical Society (Leonard Koel)
c. Fundamentals of Carpentry, American Technical Society (Durban and Sunberg)

108.1 **IDENTIFY** and **DESCRIBE** the five most common roof types.

_____
(Signature) (Date)

.2 **DEFINE** span, total run, total rise, line length, and how to **CALCULATE** pitch.

_____
(Signature) (Date)

.3 **LAYOUT** rafter and ceiling joist locations on the ridge board and top plate, then **CUT** rafters to proper length.

_____
(Signature) (Date)

.4 **INSTALL** ceiling joists properly.

_____
(Signature) (Date)

Section 108, cont'd

.5 **LAYOUT** and **CONSTRUCT** a gable end rafter to include a collar tie and king stud.

_____

(Signature) (Date)

BUILDER
Qualification Standards
Section 109

109 Exterior Finish Carpentry

References:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044
b. Carpentry, American Technical Society (Leonard Koel)
c. Modern Carpentry, Goodheart-Wilcox, Inc.(W.H. Wagner)

109.1 **LIST** the various types of siding and vapor barriers and **DISCUSS** their uses.

_____
(Signature) (Date)

.2 **APPLY** vapor barrier to exterior sheathing.

_____
(Signature) (Date)

.3 **APPLY** wood shakes or shingles. All materials will be placed within ± 1/8" of specified location.

_____
(Signature) (Date)

.4 **INSTALL** exterior clapboard siding. Siding will be level within ± 1/16".

_____
(Signature) (Date)

Section 109, cont'd

.5 **INSTALL** corner board ensuring it is plumb within ± 1/8".

_____

(Signature) (Date)

.6 **INSTALL** clapboard siding as specified.

_____

(Signature) (Date)

.7 **EXPLAIN** all components utilized in exterior finishes.

_____

(Signature) (Date)

BUILDER
Qualification Standards
Section 110

110 Composition Roof Shingles

Reference:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044

110.1 **EXPLAIN** asphalt and fiberglass shingle characteristics.

_____
(Signature) (Date)

.2 **EXPLAIN** the purpose of roofing felt under-layment.

_____
(Signature) (Date)

.3 **CALCULATE** the amount of shingles needed for a given area of roof.

_____
(Signature) (Date)

.4 **APPLY** felt under-layment.

_____
(Signature) (Date)

.5 **EXPLAIN** the function of the drip edge and **SECURE** one to a roof perimeter.

_____
(Signature) (Date)

Section 110, cont'd

.6 **APPLY** roofing paper, drip edge and roofing shingles.

_____

(Signature) (Date)

BUILDER
Qualification Standards
Section 111

111 Heavy Timber Bridge

Reference:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044

111.1 **EXPLAIN** the difference between the substructure and the superstructure of a timber trestle bridge.

_____
(Signature) (Date)

.2 **IDENTIFY** the following components in the timber bridge: trestle bent (and its parts), abutment, stringer/girder, decking (flooring, tread way), bridging, handrail, end dam, retaining wall.

_____
(Signature) (Date)

.3 **EXPLAIN** the special safety precautions involved in pneumatic power tool and air compressor use.

_____
(Signature) (Date)

BUILDER
Qualification Standards
Section 112

112 Pre-Engineered Building (PEB)

Reference:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044

112.1 **DESCRIBE** what a pre-engineered building (PEB) is and **EXPLAIN** its advantages.

_____
(Signature) (Date)

.2 **DESCRIBE** the major structural components of a PEB.

_____
(Signature) (Date)

.3 **EXPLAIN** the application of each of the following minor components (include sub-components): end wall framing, brace rod, clips, base angle, gable angle, eaves angle, and fasteners (connectors).

_____
(Signature) (Date)

.4 As a crewmember, **PREPARE** and **CONSTRUCT** the deck system of a PEB.

_____
(Signature) (Date)

.5 As a crewmember, **ASSEMBLE** the components of a PEB in accordance with the manufacturer's manual.

_____

(Signature) (Date)

.6 As a crewmember, **ERECT** the frame assembly in accordance with the manufacturer's manual.

_____

(Signature) (Date)

.7 **DISCUSS** PEB safety considerations.

_____

(Signature) (Date)

BUILDER
Qualification Standards
Section 113

113 Interior Finish and Drywall

References:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044
b. Carpentry, American Technical Society (Leonard Koel)

113.1 **EXPLAIN** the advantages and requirements of drywall construction.

_____
(Signature) (Date)

.2 **DESCRIBE** the following types of drywall: gypsum board, MR or WR (green board), "cement" board, sound-deadening board, backing board, foil-backed board, vinyl surfaced board, plaster board or gypsum lath.

_____
(Signature) (Date)

.3 **DESCRIBE** different drywall fasteners and adhesives, and how each is applied.

_____
(Signature) (Date)

.4 **DESCRIBE** the following tools and how they may be used for drywall installation: drywall hammer, drywall carrier, foot lift, drywall knife, corner trowel, mud pan, corner bead crimper, T-square, utility knife, keyhole saw, surf-form, tape banjo, sandpaper/sponge, chalk line, corner tape creaser.

_____
(Signature) (Date)

Section 113, cont'd

.5 **INSTALL** gypsum wallboard on an interior wall and ceiling.

_____
(Signature) (Date)

.6 **INSTALL** corner bead on all outside corners.

_____
(Signature) (Date)

.7 Finish wallboard by **APPLYING** and **SANDING / SPONGING** three coats of joint compound. Joints and nail recesses shall not be detectable.

_____
(Signature) (Date)

.8 **DESCRIBE** the procedure for patching wallboard.

_____
(Signature) (Date)

BUILDER
Qualification Standards
Section 114

114 Painting and Preservation

References:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044

114.1 **LIST** the benefits of proper surface preparation. **DESCRIBE** how this may be accomplished with hand cleaning, power tool cleaning, or sand blasting.

_____
(Signature) (Date)

.2 **DISCUSS** the differences between these types of paints and finishes and where each may be used: oil-based, enamel latex, epoxy, varnish shellac, lacquers, and stains.

_____
(Signature) (Date)

.3 **DISCUSS** the different ways that wall coatings may be applied and the procedures for application.

_____
(Signature) (Date)

.4 **PREPARE** paint for application.

_____
(Signature) (Date)

Section 114, cont'd

.5 **APPLY** paint to a properly prepared surface.

_____
(Signature) (Date)

.6 **EXPLAIN** all safety precautions applicable to the application of paint.

_____
(Signature) (Date)

.7 **EXPLAIN** the common types of paint failures and the reasons for each failure: "alligatoring", peeling, blistering, crawling, wrinkling, chalking, checking, and cracking.

_____
(Signature) (Date)

.8 **DESCRIBE** surface preparation for painting.

_____
(Signature) (Date)

BUILDER
Qualification Standards
Section 115

115 Doors and Windows

References:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044
b. Carpentry, American Technical Society (Leonard Koel)
c. Fundamentals of Carpentry, American Technical Society (Durban and Sunberg)

115.1 **DISCUSS** the differences between panel doors and flush doors (solid core and hollow core).

_____
(Signature) (Date)

.2 **EXPLAIN** how to layout doorframes including swing, hinges, locks, and closures.

_____
(Signature) (Date)

.3 **INSTALL** a wood door ensuring all members are plumb.

_____
(Signature) (Date)

.4 **GAIN** and **INSTALL** a hinge. Gain will be no more than 1/32" larger than the hinge.

_____
(Signature) (Date)

Section 115, cont'd

.5 **NAME** the parts of a window and **DESCRIBE** their functions.

_____
(Signature) (Date)

.6 **DESCRIBE** the following styles of windows: fixed, sliding (double hung, horizontal sliding), and swinging (casement, awning, hopper, jalousie).

_____
(Signature) (Date)

.7 **INSTALL** a window unit (i.e. a pre-hung metal sash).

_____
(Signature) (Date)

.8 **DISCUSS** the following types of window glass: sheet, plate, tempered, insulating, wired, laminated, obscure, heat absorbing.

_____
(Signature) (Date)

.9 **EXPLAIN** the procedures for replacing glass for a wood sash and for a metal sash.

_____
(Signature) (Date)

BUILDER
Qualification Standards
Section 116

116 Suspended Ceiling

Reference:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044

116.1 **EXPLAIN** the components of an acoustical tile suspended ceiling.

_____
(Signature) (Date)

.2 **LAYOUT** a grid pattern on paper and **CALCULATE** the required number of tile.

_____
(Signature) (Date)

.3 **DEMONSTRATE** how to cut tees and panels.

_____
(Signature) (Date)

.4 **INSTALL** a suspended ceiling. All joints will be tight with no smudges or handprints on panels or walls and within ± 1/8".

_____
(Signature) (Date)

BUILDER
Qualification Standards
Section 117

117 Floor and Wall Tile

References:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044
b. Setting Ceramic Tile (Tauton Press, Inc., Byrne)

117.1 **DISCUSS** how exposure and location can influence tile selection.

_____
(Signature) (Date)

.2 **EXPLAIN** the differences between resilient and ceramic tile and how they are applied.

_____
(Signature) (Date)

.3 Given room dimensions, **CALCULATE** the required number of full tile for area to be covered.

_____
(Signature) (Date)

.4 **LAYOUT** a floor for tiling. Centerlines will be laid out to within ± 1/8" and border tile will be at least the size of half a tile.

_____
(Signature) (Date)

Section 117 cont'd

.5 **IDENTIFY** and **EXPLAIN** the use of the following floor installation tools: notched trowel, tile cutter, striking tool, beating block, square notched trowel, pointing trowel, fine file/tile stone, tile nipper, squeegee/sponge, sponge float/rubber-faced trowel, electric tile saw.

_____

(Signature) (Date)

.6 **IDENTIFY** the starting place for laying tile and **EXPLAIN** why.

_____

(Signature) (Date)

.7 **INSTALL** resilient floor tile and **CUT** border/edge tile to within ± 1/8".

_____

(Signature) (Date)

.8 **INSTALL** ceramic style floor tile and **CUT** border/edge tile to within ± 1/8".

_____

(Signature) (Date)

.9 **LAYOUT** the wall for tiling. Centerlines will be laid out square to within ± 1/8" and border tile will be at least the size of half a tile.

_____

(Signature) (Date)

Section 117 cont'd

.10 **INSTALL** wall tile and **CUT** border/edge tile to within ± 1/8".

_____

(Signature) (Date)

.11 **GROUT** floor and wall tile without void ensuring surface is free of grout.

_____

(Signature) (Date)

BUILDER
Qualification Standards
Section 118

118 Interior Trim

References:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044
b. Carpentry, American Technical Society (Leonard Koel)

118.1 **DESCRIBE** what types of interior trim and identify their proper location.

_____
(Signature) (Date)

.2 **EXPLAIN** installation procedures for interior trim.

_____
(Signature) (Date)

.3 **INSTALL** baseboard and ceiling molding ensuring all nails are set with no hammer marks on the finished surface.

_____
(Signature) (Date)

BUILDER
Qualification Standards
Section 119

119 Hot Built-Up Roof [3]

References:
a. Blueprint Reading and Sketching, NAVEDTRA 10077-D
b. Builder 3 & 2, NAVEDTRA 14043 / 14044
c. NCF Safety Manual, OPNAVINST 5100.23
d. Use and Care of Hand Tools and Measuring Tools, NAVEDTRA 14256

119.1 **APPLY** hot built-up roofing using specified materials, tools, and equipment. Finished roof must have the specified number of plies at any point.

_____
(Signature) (Date)

.2 **DESCRIBE** the major steps (5) of hot tar kettle operation.

_____
(Signature) (Date)

.3 **PREPARE** a roof surface for built-up application.

_____
(Signature) (Date)

[3] Hot built-up roofing is no longer an A-School subject….likewise Section 119 "Hot Built-Up Roof" is no longer an QSB requirement. Reason: Since tar roofs are typical to commercial buildings, not NCF structures, it has been excluded from the A-School curriculum. CWO4 Bailey, NCTC Gulfport, 10 April 2003

Section 119, cont'd

.4 **SECURE** a gravel stop around the perimeter of a building.

_____
(Signature) (Date)

.5 As a member of a roofing team, **OPERATE** a tar kettle.

_____
(Signature) (Date)

.6 **DESCRIBE** the duties of each of these team members: kettle person, mop person, felt layer, broom person, carrier.

_____
(Signature) (Date)

.7 **APPLY** paper and hot plies to a roof surface.

_____
(Signature) (Date)

.8 **DISCUSS** the operational safety measures for a hot tar kettle.

_____
(Signature) (Date)

BUILDER
Qualification Standards
Section 120

120 Tear Down/Demolition

References:
a. Builder 3 & 2, NAVEDTRA 14043 / 14044
b. NCF Safety Manual, OPNAVINST 5100.23
c. Use and Care of Hand Tools and Measuring Tools, NAVEDTRA 14256

120.1 **EXPLAIN** why it is important to consider existing utilities before demolition work and what steps are to be taken.

_____
(Signature) (Date)

.2 **DISCUSS** the details of an engineering survey, asbestos survey, and the demolition plan.

_____
(Signature) (Date)

.3 **EXPLAIN** the procedures for demolition of a structure including safety precautions for residential and commercial construction.

_____
(Signature) (Date)